

**UNITED STATES DEPARTMENT OF COMMERCE****United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/274,194 03/22/99 LANG

J LAM1P083A

IMS2/0516  
HICKMAN STEPHENS AND COLEMAN LLP  
P O BOX 52037  
PALO ALTO CA 94303-0746

EXAMINER

BROWN, C.

ART UNIT

PAPER NUMBER

1765

6

DATE MAILED:

05/16/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
09/274,194

Applicant(s)  
Lang et al.

Examiner  
Charlotte A. Brown

Art Unit  
1765



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Feb 28, 2001
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

Art Unit: 1765

### DETAILED ACTION

1. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tobben (US 6,066,569) in view of Kikuchi et al. (US 5,399,202).

Tobben discloses a process for the manufacture of silicon integrated circuits. A silicon substrate is provided. An organic material free of silicon is deposited over the semiconductor substrate. The material can be a parylene. This reads on the applicant's limitation that a low dielectric constant material is disposed over a semiconductor substrate. A hard mask material overlies the low dielectric constant layer. The layer may comprise a single layer of silicon oxide or a dual layer of silicon oxide covered by a layer of silicon nitride. The mask layer is covered by a layer of photoresist (Column 3, lines 10-20). An opening is then etched through the mask layer. The original photoresist is stripped (Column 3, lines 21-37).

Unlike the claimed invention, Tobben does not disclose a method wherein the photoresist material is removed with dimethyl sulfoxide.

Art Unit: 1765

Kikuchi discloses a method for peeling a resist layer. A substrate is provided with a photoresist layer. The substrate is immersed in an ultrasonic peeling bath. The peeling liquid is an aprotic solvent of either dimethyl sulfoxide, propylene carbonate, or N-methyl-2-pyrrolidone. The ultrasonic bath is filled with a peeling liquid which is subjected to a temperature adjustment to 60°C. The photoresist of the substrate is peeled off while applying ultrasonic waves to the peeling liquid from an ultrasonic generator provided from the bottom of the bath. The substrate is held in the bath for about 30 seconds or less for complete peeling of the photoresist (Column 11, lines 57-68).

It is the Examiner's position that a person having ordinary skill in the art would have found it obvious to modify Tobben by immersing the substrate in an ultrasonic bath of dimethyl sulfoxide for removal of the photoresist layer as taught by Kikuchi therein because Tobben is not particular about the stripping process used for removal of the photoresist layer and therefore the use of a resist peeling process would have been anticipated in order to produce an expected result.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (US 5,633,175, US 5,883,011, and US 6,020,269)

Art Unit: 1765

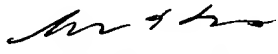
5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any inquiry concerning this communication from the Examiner should be directed to Charlotte A. Brown whose telephone number is (703) 305-0727.

CAB

May 14, 2001

  
BENJAMIN L. UTECH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700